Secretary of Defense Environmental Security Awards (FY 1999)

Name of Installation: Marine Corps Air Station, Cherry Point

Award category: Environmental Quality - Installation

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Abstract:

MCAS Cherry Point is proud of its environmental stewardship. Our management accomplishments emphasize the mutually beneficial relationship between the Air Station, the surrounding communities, and the natural environment we share. Emphasis for the 1998 and 1999 Environmental Quality and Recycling Program was founded on the development of innovative pollution prevention and comprehensive waste minimization and recycling initiatives.

During 1998-1999, environmental innovations and recycling initiatives have produced a grand total of over **$6,659,176** in income and cost avoidance. These programs have proven themselves to be an effective pollution prevention resource and waste reduction mechanism for the Air Station.

By implementing hazardous waste/material control, wastewater reuse, hazardous waste site remediation and community involvement, we have saved significant funds, reduced environmental risks, improved processes, and at the same time enhanced our environment.

SUBMITTAL FOR

1999 SECRETARY OF DEFENSE

ENVIRONMENTAL QUALITY - INSTALLATION AWARD
MARINE CORPS AIR STATION CHERRY POINT

INTRODUCTION

a. **Mission:** Marine Corps Air Station (MCAS) Cherry Point maintains and operates facilities and provides services and material to meet the operational requirements of the assigned tenants and commands. The missions of the major tenants that the Air Station hosts are as follows:

(1) The Second Marine Aircraft Wing (2d MAW): The supporting air component of Marine Forces, Atlantic, the mission of the aircraft wing is to conduct air operations to include offensive air support, anti-air warfare, assault support, aerial reconnaissance including active and passive electronic countermeasures (EMC), and control of aircraft and missiles. As a collateral function, the wing may participate as an integral component of naval aviation in the execution of such other Navy functions as the fleet commander may direct.

(2) The Naval Aviation Depot (NAVAVNDEPOT): Performs a complete range of depot level rework operations on designated weapons systems, accessories, and equipment. It manufactures parts and assemblies as required, provides engineering services in the development of changes in hardware design, and furnishes technical and other professional services on aircraft maintenance and logistics problems. This is the largest single-sited industry in eastern North Carolina, employing over 4,100 personnel.

(3) The Naval Hospital (NAVHOSP): Provides general clinical and hospitalization services to all armed services active duty and dependents, and other authorized persons. The hospital cooperates with military and civilian authorities in matters pertaining to health, sanitation, local disasters, and other emergencies.

b. **Environmental and Geographical Setting:** MCAS Cherry Point encompasses 11,485 acres and is located in the Coastal Plains area of eastern North Carolina, Craven County, approximately midway between New Bern and Morehead City. Highway access is provided by U.S. Highway 70 and NC Highway 101. The Air Station proper is located on a peninsula bounded on the north by the Neuse River, on the east by Hancock Creek and on the west by Slocum Creek. The southern boundary borders on NC Highway 101. The Croatan National Forest is located adjacent to the Air Station boundary. In addition, the Air Station maintains three outlying airfields and two target complexes totaling 15,732 acres. The Air Station, 2d MAW, and its industrial tenant command, the NAVAVNDEPOT, have continued for more than a half century to carve their places in history as service/industrial organizations that support the training and maintenance of our nation's sophisticated national defense machine. One might think of MCAS Cherry Point as being comparable to a small city with a large industry and an international airport (120,000 operations per year) populated by 10,000 marines and sailors, their 13,500 dependents, and more than 6,500 civilian employees for a total population of approximately 30,000.

BACKGROUND

a. **Environmental Challenges at MCAS Cherry Point:** Enactment of the Resource Conservation and Recovery Act (RCRA) in 1976, followed by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) or "Superfund" of 1980, and the Hazardous and Solid Waste Amendments (HSWA) of 1984 provided impetus to clean up federal facilities, preserve the natural environment, and improve quality of life. Prior to passing RCRA, CERCLA, and HSWA Congress had passed the Clean Air Act, the Clean Water Act, and the National Environmental Policy Act (NEPA). Those laws and their amendments, together with additional state and federal environmental laws and Executive Orders, resulted in a mammoth undertaking by the Air Station to properly manage environmental resources and properly respect the environment in the planning and execution of new projects. Headquarters Marine Corps (HQMC) incorporated the environmental management requirements set forth in current law in the USMC Environmental Compliance and Protection Manual, Marine Corps Order (MCO) P5090.2A dated 10 Jul 98. This Order and other environmental directives required U. S. Marine Corps commands to comply with federal,

state, and local environmental and natural resource laws and regulations. Guidelines were thus established for a Marine Corps-wide policy to address environmental concerns.

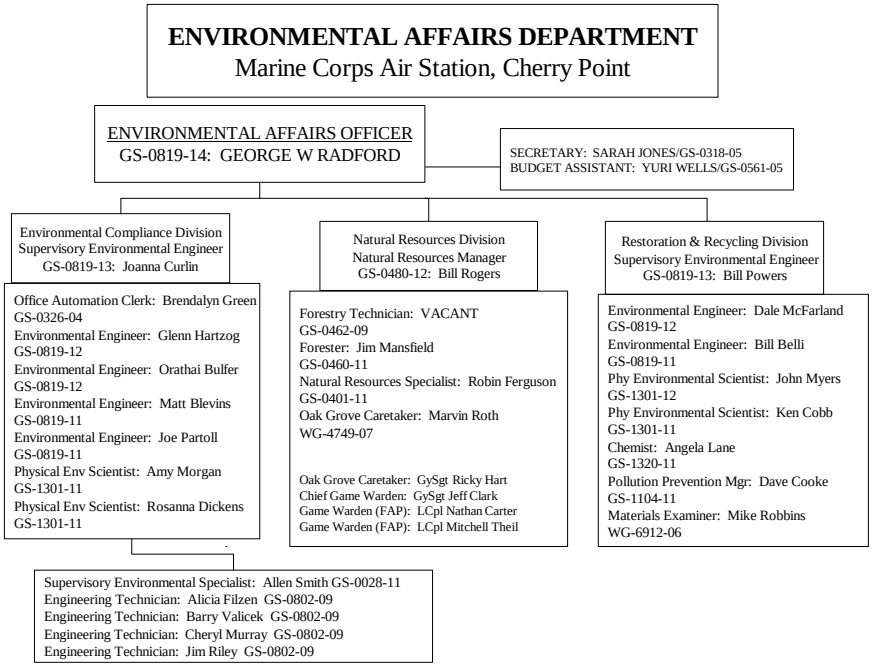
(1) The three Marine Air Groups of the 2d MAW located aboard MCAS Cherry Point operate facilities and maintain aircraft in support of the wing mission. Aircraft currently based at MCAS Cherry Point, in squadron strength, include the AV-8B Harrier II, EA-6B Prowler, and C-130 Hercules. Marine Aircraft Group-14 operates maintenance and repair facilities for 145 aircraft currently assigned. Marine Wing Support Group-27 operates engineering support and construction equipment. Marine Air Control Group-28 operates electronic support equipment, air defense operations, and facilities in support of the 2d MAW. These groups operate maintenance and repair facilities for the wide variety of equipment assigned to each unit.

(2) The Air Station maintains support and maintenance facilities for two C-9B aircraft, two C-12 aircraft, and three CH-46 search and rescue helicopters. More than 1,000 items of garrison mobile equipment are in use by the Air Station in support of the 2d MAW and tenant commands. The Air Station operates two equipment maintenance facilities for mobile garrison equipment.

(3) The Air Station operates a 0.627 million-gallon-per-day (MGD) facility, which pre-treats industrial waste discharged from the 1.6 million square foot NAVAVNDEPOT. The Industrial Wastewater Treatment Plant flow is further treated in the Air Station's 3.5 MGD wastewater treatment plant (WWTP). The Air Station provides potable water through a well field of 24 deep wells and a 6.0 MGD water treatment plant and distribution system that exceeds the stringent requirements set forth under the National Primary Drinking Water Regulations. The utility infrastructure at MCAS Cherry Point serves approximately 30,000 Marines, dependents, and civilian employees together with 2,864 housing units and 1500 barracks and operations structures containing eight million square feet.

(4) The Air Station and tenant commands have 40 hazardous waste (HW) generators which store and treat HW, such as contaminated petroleum, oils, and lubricants (POL); spent cleaners and organic chemicals and solvents; electroplating wastes; paint sludges, paint stripping compounds and thinners; sandblast residue; acids and electrolytes. Permitted HW management facilities include 70 HW accumulation sites and two permitted HW storage lots. The Air Station and outlying fields contain 14 historic HW disposal Installation Restoration (IR) sites and 114 Solid Waste Management Units that are regulated under a Resource Conservation and Recovery Act 3008(h) Consent Order.

b. **Organization, Staffing and Management Approach:** The Environmental Affairs Department (EAD) of the Air Station Facilities Directorate manages all environmental matters for MCAS Cherry Point; Marine Corps Auxiliary Landing Field (MCALF), Bogue; Marine Corps Outlying Landing Field (MCOLF), Atlantic; Marine Corps Outlying Field, Oak Grove; and tenant commands. The department has oversight for and advises the Commander, Marine Corps Air Bases, Eastern Area on environmental matters for MCAS Beaufort; MCAS New River; and Marine Corps Air Field, Quantico. These tasks are carried out by an environmental staff of thirty-two professional and technical personnel, distributed within the Environmental Compliance Division, Restoration & Recycling Division, and Natural Resources Division.



(1) This Department directs programs to develop, implement, and administer environmental management and engineering procedures and policies that will achieve and maintain full compliance with federal, state, and local environmental regulatory requirements for the Air Station, outlying fields, and tenant commands; coordinates and develops environmental documentation under NEPA for Air Station actions; provides a point of contact for environmental issues affecting the Air Station, outlying fields, and local civilian communities; directs usage of land resources for approved programs; and coordinates with federal and state environmental and natural resources agencies concerning regulations which may have an impact on human health or the environment.

(2) The EAD management approach is built upon command support and concentrates in five important areas: technical assistance, internal auditing, personnel training, waste minimization, and community service.

(a) *Technical assistance*, which is readily available, is the hallmark of the environmental management program. Each unit aboard the Air Station is required by Air Station Order (AirStaO) 5090.5 to designate an officer and staff noncommissioned officer or civilian equivalent as an environmental coordinator and assistant environmental coordinator, respectively. These individuals are responsible for day to day environmental management in their unit. Each unit is assigned a designated EAD environmental technician and an environmental media support professional to provide technical assistance and assist with regulatory compliance matters. This process promotes the early detection of environmental concerns and provides a framework in which to address these concerns.

(b) *Internal auditing* is critical to the program for environmental compliance. Unit environmental coordinators perform daily and weekly inspections, conduct inventories, and maintain files on waste turn-ins, spill reports, inspections, and personnel training coordinators assist in developing and maintaining overall management plans for their units. The EAD environmental staff -work with these coordinators and perform weekly compliance audits of each unit.

(c) An innovative *Training program* has been developed in order to ensure environmental regulatory compliance and because of the high military turnover rate. This program was developed and is carried out by the EAD. In the past two years, 3,000 people have been provided environmental training.

(d) *Waste minimization* efforts are centered in the Pollution Prevention Team. This unique concept has achieved significant results in a relatively short period. Recycling volume has increased and hazardous waste generation has been reduced nearly 77 percent over the 4.0 million generated in our baseline year of 1985. These positive results are achieved through a base-wide waste reduction program.

(e) *Community service* is an integral part of the overall environmental program. Air Station technical and spill response personnel are available to assist local communities with chemical and environmental emergencies. The Air Station is working through the Civilian-Military Council to provide assistance with long range, emerging environmental issues.

(3) Pollution Prevention Team: Cherry Point's Team Approach provided the impetus for the formation of the team approach to pollution prevention. This has proven successful in implementing the complex programs that make up the infrastructure of the Air Station. This team is unique in that all six organizations that are responsible for the success of the overall Pollution Prevention Program are from different commands aboard the Air Station. The Pollution Prevention Team consists of staff from the following organizations:

(a) *The EAD* has oversight for management, planning, and training for environmental quality aboard the Air Station.

(b) *The Defense Reutilization and Marketing Office* (DRMO) provides for the material preparation, warehousing, marketing and sales of various recyclable materials.

(c) *The NAVAVNDEPOT* serves as management for pollution prevention in their command structure and does research and development in the areas of material substitution and improved material management.

(d) *The Supply Directorate* controls and operates the Centralized Hazardous Materials Control Center that issues hazardous material (HM) and reissues excess HM aboard the Air Station.

(e) *The 2d MAW* operates HM and HW facilities to include the newly implemented Consolidated

Hazardous Reutilization Inventory Management Program (CHRIMP), provides unit coordinators to manage, store, and recycle excess commodities and materials, as well as conducting pollution prevention inspections and audits through the Wing G-4.

(f) *The Facilities Maintenance Department* (FMD) provides storage facilities, and support for the recycled fuels and oils programs.

c. **Boards/Committees**

(1) Civilian-Military Community Council: This prime organization interfaces with the Air Station and surrounding communities. The Air Station Commanding General (CG) represents the Air Station at meetings, which are attended by top executives and elected officials of Craven, Pamlico, Carteret, Jones, and other adjoining counties. The council serves as a planning group for civilian-military concerns that may impact the local populace or the Air Station military community.

(2) Environmental Impact Review Board (EIRB): Established by AirStaO 5420.23B, the EIRB is responsible for review of actions proposed by the Air Station that have potential impact on the environment.

(3) Restoration Advisory Board: Reviews work performed under the CERCLA program and passes the information to the community and brings community comments and concerns back to the Installation Restoration Team.

(4) Local Emergency Planning Committee: The EAD is a member of the Craven County Local Emergency Planning Committee (LEPC), which exists to open lines of communication between the general public and industries that store and/or use hazardous chemicals. The Committee is a depository for and makes public all hazardous chemical information for subject industries within the county. In addition, the LEPC provides training through Business and Industry Conferences to educate industries on the requirements of the Emergency Planning and Community Right to Know Act.

(5) Advisory Boards: A number of working Advisory Boards provide planning and guidance in steam generation, sewage treatment, electrical distribution, and water supply. These boards are constituted aboard the Air Station to provide a working level source of information in pollution prevention and other environmental issues.

d. **Plans and Management:** Environmental planning aboard the Air Station is designed to address issues associated with short range management and long range emerging requirements. The short range or immediate management issues are addressed through Air Station Orders and Plans which detail command requirements on specific and immediate issues and detail actions required. Long range planning is exemplified by Cherry Point's Strategic Plan that was developed in 1993 and is updated annually. Under this plan the Air Station has entered into several far-reaching environmental agreements with local government bodies. Under the auspices of the Civilian-Military Community Council, a joint MCAS Cherry Point and county strategic plan was published. This plan contains a significant environmental infrastructure component and was developed to address long range growth issues for the region comprising the counties of Craven, Carteret, Pamlico, and Jones and MCAS Cherry Point. In addition, several emergency response and assistance agreements have been executed and/or updated during the report period.

(1) Command has adopted the following Air Station Orders (AirStaO) to remain in compliance:

(a) *AirStaO P1710.K*-SOP for Hunting, Fishing, Trapping, and Boating
(b) *AirStaO 5090.1* - Environmental and Natural Resource Protection SOP
(c) *AirStaO 5090.2*-Resource Recovery Qualified Recycling Program (QRP)
(d) *AirStaO 5090.3*-Air Station Policy on Environmental Compliance
(e) *AirStaO 5090.4*-Management of Underground Storage Tanks (UST)
(f) *AirStaO 5090.5*-Handling, Transfer, and Disposal of HM and HW
(g) *AirStaO 5090.6*-Ozone Depleting Substance (ODS) Management
(h) *AirStaO 5420.23C*-Functions of Environmental Enhancement Committee and EIRB
(i) *AirStaO 11015.3D*-Procurement of Wood and Forest Products for Personal Use
(j) *AirStaO 11015.4D*-Air Pollution Emergency Abatement Plan
(k) *AirStaO 11350.1*-Solid Waste Disposal Plan

(2) Long Range Plans and Agreements:

(a) *Strategic Plan* for the adjacent Counties and MCAS Cherry Point

(b) *Mutual Assistance* Agreement for HM Spills and Leaks, City of Havelock, City of New Bern, Craven and Carteret Counties.

(c) *Local Emergency* Planning and Community Right to Know Act Emergency Planning Agreement with Craven County.

(3) Coastal Regional Solid Waste Management Authority (CRSWMA): A 30-year agreement was entered into on 31 December 1993 between the CRSWMA and the Air Station. This agreement ensures that all municipal solid waste generated within the regional area, including MCAS Cherry Point, will be disposed in a manner which complies with the North Carolina Solid Waste Management Act of 1989.

PROGRAM SUMMARY

a. **Objectives of the Environmental Quality Program:** Accomplishments of the environmental quality programs have largely resulted from following the management objectives set forth in the Air Station Environmental Strategic Plan adopted in 1993 and updated annually. The objectives and significant overall achievements relative to each are detailed below:

(1) Awareness: Awareness is provided through effective interaction with appropriate national, state, regional, and local agencies; education of ourselves, our customers, and our suppliers on the proper care of the environment and natural resources and through training of our team to meet and surpass established environmental performance standards. Our awareness-training program has proved successful in fostering a positive attitude toward exceeding routine environmental requirements, on the way toward surpassing established norms.

(2) Planning: In concert with existing regulations and in anticipation of projected changes, we work closely with responsible agencies to plan for our development and that of our surrounding communities and region. Furthermore, established cooperative agreements and plans with surrounding county governments have positioned the Air Station as a leader in addressing regional environmental issues.

(3) Prevention: We implement changes to our processes to prevent pollution. We comply with existing regulations; monitor all processes to ensure compliance; and seek ways to improve. During the past two years, as documented by our Environmental Compliance Evaluation (ECE), the Air Station is shifting the environmental management emphasis to issues dealing with prevention rather than compliance. During fiscal year 1999 MCAS Cherry Point has reduced HW generations by nearly 77 percent over the 4.0 million generated in our baseline year of 1985.

(4) Reduction: We are actively working to reduce the amount of waste generated, both hazardous and otherwise, by careful selection of material and using closed loop systems and recycling. As indicated by our achievements in pollution prevention, it is possible to achieve significant waste reduction through changing the status quo relative to process modification and solid waste management.

(5) Remediation: We actively seek and identify hazardous waste sites. We remediate sites by cutting edge and proactive cleanup procedures in keeping with regulatory standards. All historic hazardous waste chemical release sites aboard the Air Station have been identified and programmed for remediation.

b. **Overview of Outstanding Program Features and Accomplishments:** Recognition of past achievements in environmental stewardship is evidenced through receipt of the following awards during 1998 and 1999.

1998	1997 *Environmental Protection* magazine's "Facility of the Year" Award
1998	1997 Secretary of the Navy Recycling Award - Industrial Installation
1998	1997 Secretary of the Navy Environmental Quality Award - Industrial Installation
1998	1997 Secretary of the Navy Natural Resources Conservation - Individual
1998	1997 Department of Defense Recycling Citation for Meritorious Achievement
1998	1997 Department of Defense Environmental Quality Citation for Meritorious Achievement
1998	1997 Department of Defense Natural Resources Conservation – Individual Citation for Meritorious Achievement

1998 1998 Renew America's Environmental Sustainability Certificate of Environmental Achievement in Pollution Prevention and Recycling
1999 1998 Secretary of the Navy Pollution Prevention Award - Industrial Installation
1999 1998 Secretary of the Navy Environmental Cleanup Award- Industrial Installation
1999 1998 Commander in Chief's Installation Excellence Award
1999 1999 White House Closing the Circle Award - Certificate of Achievement
1999 1998 Governor's Award for Excellence in Waste Reduction - Significant Achievement

In 1995, MCAS Cherry Point won the ***first*** White House Closing the Circle Award in Recycling. This award was won in competition with 233 other applicants throughout 15 Federal agencies and demonstrates the level of proficiency achieved by the Air Station's recycling programs. By winning the 1997 Renew America's Environmental Sustainability in Hazardous Waste Management and Recycling, Cherry Point was 1 of only 24 winners who were selected from over 1,600 applicants. As a testament to Cherry Point's environmental education campaign, the winning poster came from MCAS, Cherry Point for the United States Marine Corps Earth Day '97 Poster contest. MCAS Cherry Point has excelled among DOD facilities by winning the Commander in Chief's Installation Excellence Award on five occasions over the past 10 years since the award has been given, 1988, 1994, 1996, 1997 and 1999. This award is unique in that it provides a monetary award of $200,000 that has been used for quality of life programs for the Marine and civilian work force. The $1,000,000 received from this source has been utilized to improve the working and living environment aboard the Air Station. MCAS Cherry Point was named as one of only six selections as the **"Facility of the Year for 1997"** by the *Environmental Protection* magazine in its January 1998 issue. This prestigious award designation was the result of Cherry Point's sustained commitment in innovative recycling, pollution prevention, and HW management programs. Furthermore, the EAD staff has received five prestigious Commander in Chief's Awards for outstanding achievements by individuals. This record of previous achievement sets the stage for continuing efforts toward environmental quality.

c. **Unique features of Program:** The most unique feature of the program is the unprecedented level of command support that has been fostered aboard the Air Station and among the tenant commands. More than any other factor, this is due to the advantageous location of the EAD in the chain of command. It is relatively easy to incorporate environmental considerations early in the project planning and development process because the Facilities Directorate includes housing, engineering, development, construction, and maintenance of all facilities. This availability of environmental expertise early in project planning has been carried over to tenant commands. The 2d MAW has a wing environmental officer and each squadron-size unit has an environmental coordinator. The NAVAVNDEPOT has a professional environmental staff, as does the DRMO. The NAVHOSP and other tenant commands have staff individuals designated to coordinate environmental issues. The culmination of the overall organization and command support is the high level of environmental stewardship that is evident at all levels of the Air Station.

ACCOMPLISHMENTS

a. **Air Pollution Control:** The Air Station operates Air Permits covering 29 emission sources including painting and blasting operations, fuel storage, woodworking, jet engine testing, and process and comfort heat production utilizing boilers ranging from 63 - 96 MBtu/hr.

(1) The Air Station submitted a Title V application to the Air Quality Division of the NCDENR in December 1996 and is awaiting state approval and issuance during the summer of 2000.

(2) The Air Station continues to submit air emissions inventories and all operating permit specified reports. Risk assessment planning under Section 112(r) was completed three years in advance of the mandated deadline and this planning has been incorporated into the Air Station Facility Response Plan. Compliance with the Aerospace National Emission Standards for Hazardous Air Pollutants (NESHAP) is currently under development. The EAD has trained military personnel to ensure that all requirements under the NESHAP were met.

(3) MCAS Cherry Point has reduced toxic chemical releases to the environment by 87 percent from

calendar year 1994 to 1999. This reduction is due largely in part to improved material management, material substitution, and process modifications. For instance, hydrochloric acid production from coal combustion has decreased by reducing the use of coal and by utilizing refined emission factors obtained from actual source testing. In addition, methylene chloride has been significantly reduced by the use of mechanical rather than chemical stripping and toluene and xylene emissions have been reduced by employing the use of high volume, low pressure paint guns rather than the high VOC aerosol paint cans. Continued reductions will be realized from hazardous material consolidation efforts currently in progress at the Wing level.

(4) In conjunction with material substitution in paint gun cleaning operations, the Air Station transitioned to an automatic paint gun cleaning system in FY 98, which is designed to minimize solvent usage and reduce VOC emissions. Before the transition, squadrons cleaned paint gun equipment by spraying aircraft thinner or methyl ethyl ketone into an open bucket until the output was clear. Solvent laden rags were then used to wipe the exteriors of the paint guns, with the rags being discarded as HW. In addition to reduced VOC emissions from gun cleaning operations, HW generation was reduced. The Air Station instituted a high volume, low pressure (HVLP) spray painting program for squadrons in the 2d MAW in 1997 and 1998. Before the HVLP program was initiated, painting of aircraft components and wing support equipment was performed with conventional spray guns and aerosol cans which were both inefficient and large contributors of VOC emissions released to the air. With HVLP paint gun technology in place, transfer efficiencies have improved by 30 to 40 percent. With improved transfer efficiencies, the Air Station realized a 50 percent reduction in paint usage at savings of $20,000 per year. VOC emissions were reduced by approximately 1,000 pounds per year. Squadrons utilizing the HVLP paint gun technology have indicated that finish quality is vastly improved due to minimal overspray and greater substrate adherence.

b. **Water Pollution Control:** The Air Station operates wastewater treatment facilities at MCAS Cherry Point, MCOLF Atlantic, and MCALF Bogue**.**

(1) Permits associated with these treatment facilities are in compliance and monthly reports are submitted on time. An excellent working relationship exists with both state and regional regulatory agencies.

(2) The Wastewater Reuse - Golf Course Spray Irrigation System began operation on 3 September 1997. Since that time approximately 10 million gallons of treated wastewater and 900 pounds of nutrients have been diverted from the Neuse River to the golf course. Cherry Point is one of few communities, and the only federal facility in the state, that owns and operates a golf course spray irrigation system. The Air Station's permit will allow up to 70 percent of the average daily flow of the WWTP to be applied to the golf course when drying conditions are ideal. As an added bonus, a corresponding reduction in groundwater withdrawal from the Castle Hayne aquifer, the primary drinking water resource for eastern North Carolina, is also being achieved.

(3) Even more promising than golf course spray irrigation is the prospect of wastewater reuse in forested areas aboard the Air Station. Study of a 700+ acre site located in the Ordnance Area, initiated in September 1998, indicates Cherry Point may be able to reuse as much WWTP effluent as the golf course, but on a much more consistent basis because of the greater amount of acreage involved and the absence of mitigating factors such as direct human contact. At the present time, the land is being surveyed, wetlands delineated and the distribution system is being designed.

(4) Borne out of the original intent of the Clean Water Act, i.e. the elimination of wastewater discharges into waters of the United States, the Air Station is pursuing 100 percent wastewater reuse. In order to round out the prospect of achieving that goal, the Air Station is also seeking to further purify our wastewater effluent and thereby open up new avenues of reuse. For example, a project was initiated in FY 98 to greatly reduce the nitrogen and phosphorus content in our wastewater effluent with an enhancement biological process. Once operational, this new Biological Nutrient Removal System will reduce the quantity of nutrients in our treated wastewater effluent by 50 percent or better.

(5) Also in FY98, the Air Station initiated an engineering review of alternative wastewater disinfection methods. Besides the obvious worker safety hazards associated with the current disinfectant, chlorine gas, the quantity of chlorine gas used and stored at the WWTP triggers extensive risk management regulation under the Clean Air Act, Emergency Planning & Community Right-to know Act (EPCRA) and the Occupational

Safety & Health Administration. From the results of that study, the Air Station has elected to proceed with installation of a state-of-the-art ultraviolet (UV) light disinfection system at the WWTP. A UV system affords the Air Station unlimited disinfection capability with no adverse environmental effects from residual chlorine and far less health and safety concerns. Increased power costs will be mitigated by the $15,800 per year savings in chlorine gas purchases.

c. **Waste Management and Resource Recovery:** Initiated at MCAS Cherry Point in 1988 with the development of an infrastructure for an Industrial Qualified Recycling Program (QRP) to recycle commodities on a value priority basis, the Air Station has developed a recycling program for items such as steel, white and yellow metals, fired brass, high temperature alloys, waste oil, JP4/JP5 fuel, tires, batteries, and hazardous materials. By recycling more than 20.9 million pounds through the DRMO, the QRP has generated over $1.2 million in revenues for the Air Station since the program began. In FY98/99, over 3.1 million pounds were recovered and recycled, producing over $132,000 in income for the Air Station. Total income and cost avoidance for the last two years from pollution prevention and recycling programs have amounted to over **$6,659,176**. From March 1994 to August 1998, nearly $750,000 has been provided to MWR Directorate for quality of life projects. The following projects are among some of what the QRP proceeds were used for: the purchase of a large tour bus, a recreational addition to Hancock Boating Marina, an outdoor entertainment stage, the purchase of carpet cleaners with cleaning fluids, locks, medicine cabinets for the troops in their new barracks, and picnic shelters.

(1) Solid Waste Management: Emphasis was founded on the development of a pollution prevention and comprehensive waste minimization resource recovery and recycling program. The following accomplishments were achieved by adopting a self-supporting and comprehensive waste minimization program. For example, a unique Material Recovery Facility was constructed to process household and commercial waste streams using state of the art operating procedures and funds generated by the QRP. The following is a summary of the more outstanding pollution prevention/recycling savings and income achieved in the past two years:

(a) *Qualified Recycling Program*. The recycling of steel, white and yellow metals, fired brass, high temperature alloys, tires, batteries, and miscellaneous items.

Pounds	Income	Cost avoidance
3,165,803	$132,182.84	N/A

(b) *Waste Oil Wealth Program.* The sale/donation of waste oil as a result of adoption of a program to source segregate chlorinated solvents from waste oil and resource recovery by burning waste oil in the central heating plant.

Gallons	Income	Cost avoidance
146,471	N/A	$313,113.74

(c) *Used Fuel*. The recycling of jet fuels and supplying fuels for burning at the Air Station main heating plant and training for Crash Crew.

Gallons	Income	Cost avoidance
276,497	N/A	$830,596.99

(d) *Used Solvent Elimination (USE)*. The removal and recycling of spent solvent from parts cleaning machines.

Gallons	Income	Cost avoidance
68,307	N/A	$409,842.00

(e) *Household Recycling Program*. The recycling of aluminum and steel beverage cans, glass and plastic containers, and newsprint; initially utilizing a drop-off type program and then adopting a curbside collection for 2840 base housing units.

Pounds	Income	Cost avoidance
580,560	N/A	$43,542.00

(f) *Wood Waste Recycling*. Selling wood wastes from the construction debris landfill.

Pounds	Income	Cost avoidance
12,556,000	N/A	$291,921.00

Total Income: $132,183 Total Cost Avoided Savings: $1,889,016

(2) Toxic and HW Management: Anti-freeze Recycling (Ethylene Glycol) in FY96. An unused double-walled 4,000 gallon tank was found and placed into service for the purpose of recycling anti-freeze aboard the Air Station. By utilizing this unused tank, the recycling program saved $40,000 in acquisition costs for the tank and has saved over $29,767 in cost avoidance by recycling 12,252 gallons of used anti-freeze during FY98/99. During FY96, a fluorescent lamp recycling program was initiated at the Air Station to prevent mercury-containing lamps from entering landfills. All Station activities now bring spent lamps to a central location to be recycled. In FY 98 and FY 99, the fluorescent lamp recycling program successfully recycled more than 17,750 lamps generated from Air Station activities. This P2 program resulted in the diversion of approximately 9,500 pounds of waste from the HW stream and allowed the recovery of mercury vapor that would have otherwise been released to the environment. The lamps were recycled using a state-of-the-art process, which recovers and recycles 100 percent of the component materials, including the highly toxic mercury vapors. The Hazardous Material Control Center (HMCC) is a "cost avoidance" program in which unused HM is collected and/or turned in from various civilian and military operations, and advertised via electronic mail and newsletters for reuse or as free material. The organizations taking advantage of this program include not only MCAS Cherry Point, but also other military installations. For instance, excess material collected at MCAS Cherry Point is advertised for potential reuse at MCAS Beaufort, SC and MCAS New River, NC. Actual cost savings from October 1, 1997 through September 30, 1999, for the reuse program is represented by the following:

(a) Value of HM issued from cost avoidance for reuse.....$2,499,024.

(b) Estimated disposal cost avoided by reuse.....$1,999,187.

Total cost avoided savings (a and b).....$4,498,211.

The program not only fosters reductions in material stocking costs, but also wide-scale involvement in and promoting of cost avoidance through pollution prevention. Cost avoidance and material substitution is enhanced because this material, or a less hazardous substitute, will be issued to the next customer.

(3) Construction Debris Landfill: During FY98/99, the Air Station continued recycling programs to limit the amount of construction and demolition debris deposited in the Air Station landfill. This focused Air Station recycling strategies not only on wastes from construction activities, but also wastes from industrial and administrative activities aboard the Air Station. This effort reduces the amount of material amassed at the Air Station landfill by approximately 90 percent. The programs include stockpiling soil for use in beneficial fill projects; grinding and composting wood-waste and yard debris into a usable topsoil; stockpiling of scrap lumber and wood products sold as useful lumber or ground for landscaping mulch and/or boiler fuel; diversion of concrete and masonry debris for shoreline stabilization, beneficial fill, and road projects; and stockpiling of asphalt and roofing debris for road and paving projects.

(4) Solid Waste Source Segregation and Recycling: In FY 98, the Air Station achieved its goal of 100 percent reuse and recycling of waste lumber and pallets generated by the Air Station and tenant Commands. Excess pallets and lumber are first offered for reuse to government activities, charitable organizations, private entities, and individuals. Material that is not reused is ground into mulch and used as erosion control ground cover. Over 300 tons of this material was utilized as groundcover during a single project, the Slocum Road Longleaf Pine Initiative. Excess mulch is sold for use as fuel at a local wood energy plant. This program diverts up to 2,500 tons of solid waste per year from landfill disposal and assists the Air Station in exceeding the 40 percent solid waste diversion goal established in North Carolina General Statute §130A-309.04. During FY 98, the Air Station implemented a program to reuse waste prill material from the water treatment plant spiractor softening system as a firebreak at the explosive ordnance disposal range. Nitrogen released during detonation of explosives produces a fertilized environment that supports high plant growth rates, creating a significant fire risk during dry periods. Because the prill is essentially inert and therefore not expected to support significant plant growth, the Air Station is using the material to create a firebreak around the perimeter of the range. In addition to reducing the need for chemical weed control at the range, 200 tons of prill material was diverted from the solid waste stream for a cost avoidance of almost $20,000.

d. **Environmental Research and Education:** Informal and formal classroom training provides a major contribution to the success of environmental quality and waste reduction at MCAS Cherry Point. Informal classroom training is provided by the EAD engineers and technicians; formal environmental training courses were developed specifically for environmental coordinators and the pollution prevention and recycling requirements of MCAS Cherry Point. During 1998 and 1999, over 3,000 people were trained through these training programs. In order to enhance environmental ethic and awareness, topics included pollution prevention and waste reduction management techniques and environmental stewardship.

(1) The RCRA HW Compliance Beginner's Training Course and Environmental Compliance Refresher Training Course was developed by EAD personnel as a means of meeting environmental goals and satisfying regulatory mandated training requirements. The first course is a formal two-day course and the second is a one-day course. Each is designed for classes consisting of 40-50 students. . The two-day course uses a two hundred page manual developed by the EAD staff for MCAS Cherry Point. It is offered up to twelve times per year. During 1998-1999, over 1,000 personnel were trained in this course. The most effective aspect of this course is that the instructors are all experienced employees on the EAD staff and teach course sections which are within their area of expertise. The one-day Environmental Compliance Refresher Course is offered on a quarterly basis and covers compliance topics of current interest. These two courses, combined with the informal training program, ensure a high level of pollution prevention, environmental awareness, and compliance aboard the Air Station.

(2) The Air Station newspaper, the *Windsock* is another means of enhancing environmental protection and awareness through program publicity. During the last two years, numerous articles have been published on subjects such as the recycling program, pollution prevention, water quality, and water resource protection, the aquifer management plan, the IR program, the environmental training program, and HW minimization. Through articles published in the Windsock, environmental information is distributed to all members of the MCAS Cherry Point civilian/military community.

(3) To further enhance the environmental information program, the Environment 2000 brochure and the Environment 2000 video are used in the command brief and for public service and educational purposes aboard the Air Station and in the surrounding community.

(a) *Pollution Prevention Manager, Dave Cooke* is a member of the Craven County Clean Sweep Committee which works with recycling and beautification programs. He served as the Vice Chairman in FY91, was nominated Chairman in FY92 and elected Chairman in 1998. He is also an active member in the National Recycling Coalition and the Carolina Recycling Association (CRA). He was appointed to the NCRA's Education and Outreach Committee in July 1997. This committee is responsible for the administration of the organization's annual awards, including evaluating categories, adding new awards, and advising the Awards Committee on the awards process. He has also been appointed as a judge for the 1997 Annual Awards for Excellence in Waste Reduction and Recycling Programs. He serves as a member of the State/Military Environmental Issues Working Group on Pollution Prevention.

(b) *EA Officer, George Radford* was appointed in 1998 as a judge for the 1997 Governor's Annual Awards for Excellence in Waste Reduction. Mr. Radford also serves on the Annunciation Catholic School Long-Range Planning Committee and the School Advisory Board.

(c) *Clean Air Act Manager, Orathai Bulfer* is member of the Local Emergency Planning Committee and serves as a member of the State/Military Environmental Issues Working Group on Pollution Prevention.

(d) *EAD environmental personnel* represent the Air Station in the Neuse River Basin Advisory Committee that addresses a variety of topics ranging from recycling to point source discharges and agricultural runoff. Staff personnel periodically represent the Air Station in state regulatory planning and legislation meetings.

(4) In 1996, the MCAS Cherry Point, EAD and Pamlico Community College joined together to form a cooperative education program that provides training for environmental science students and benefits the Air Station and the community as a whole. Each intern volunteered their time and contributed significantly by completing meaningful projects that would have otherwise required a contract or staffing by government

personnel. Approximately $50,000 in cost avoidance savings was realized as a result of this cooperative effort. In 1997 and 1998 EAD accepted the first intern from a graduate institution initiating a cooperative program with the Nicholas School of the Environment of Duke University. In pursuit of a Master of Environmental Management degree in environmental toxicology and risk assessment, Stephanie Maxon began an internship acting as a toxicological and ecological consultant for the Environmental Affairs Department. Miss Maxon conducted an environmental health assessment of Slocum Creek, a site located adjacent to the Air Station. Her evaluation and recommendations offer direction for further action related to CERCLA compliance. For the Air Station Stormwater Program, she prepared a Standard Operating Procedure for qualitative stream health monitoring for eight stormwater outfalls. This program will contribute to compliance for the first NPDES permit issued separately for stormwater in North Carolina. In addition, she performed a historical trend analysis for the Air Station wastewater treatment plant (WWTP) outfall in terms of water quality protection for the relocated outfall in the Neuse River. The Air Station, Pamlico Community College, N. C. State University, and Duke University plan to continue the program and are planning new and challenging projects that meet critical needs aboard the Air Station.

e. **Environmental Compliance Assessment and Management:** The Air Station is recognized as an environmental leader within the DOD. We are faced with formidable environmental challenges as a result of our size and location; the nature of our mission; and the increasingly complex environmental laws and regulations. Cherry Point responds to these challenges through the use of TQL principles and operates on a system of integrated environmental management and mutual regulatory compliance accountability. The EAD has overall responsibility for environmental and natural resources management programs aboard the Air Station. The multi-disciplinary staff includes engineers, environmental scientists, foresters, biologists, and environmental technicians who are dedicated to proactive environmental management.

(1) The *Marine Corps Environmental Compliance Evaluation (ECE)* process has been incorporated as an annual inspection in order to comply with federal, state, and local regulations, DOD Directives and Instructions, and Marine Corps Orders. This audit is one tool used to ensure environmental compliance and development of proper management. Headquarters U.S. Marine Corps (HQMC) conducted an ECE at MCAS Cherry Point 11-22 August 1997. In 1998 and 1999 a self-audit utilizing the MC-ECE was performed by EAD personnel. The ECE program is designed to evaluate Marine Corps installation environmental compliance and protection, and to determine those environmental management areas that may require further attention in order to meet applicable laws, regulations, and directives. Thirty-two environmental management areas and numerous sites were examined at MCAS Cherry Point. MCAS Cherry Point is striving to achieve complete environmental compliance, exhibiting a compliance rate of over 99 percent with respect to applicable federal, state, and local laws and regulations. This accomplishment is directly attributable to the commitment to excellence and environmental awareness of the Marines, Civilian Marines, tenant command personnel aboard MCAS Cherry Point, and the environmental leadership from the EAD. The areas inspected were: Air Emissions; Wastewater Discharge; Solid Waste Management; Hazardous Waste Management; Pesticides; PCB Management; Drinking Water; POL Management; Hazardous Materials Management; Multiple Land Use Natural and Historic; Natural Resources Management; Noise Pollution Abatement; National Environmental Policy Act; and Installation Restoration Program.